

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134700019-6

~~MITROFANOV, M.G.~~; LEDYASHOVA, G.Ye.; BEREZHNOVA, M.I.; KYAZIMOV, A.A.;
FEDOTOVA, A.F.; STEPANYAN, E.G.

Test results of an experimental plant rotary disk contactor.
Trudy GrozNII no. 15:213-219 '63. (MIRA 17:5)

MIRSKIY, Ya.V.; MITROFANOV, M.G.; POPKOV, B.M.; RUCHKO, L.F.;
BOLOTOV, L.T.; MEZHLUMOVA, A.I.

Developing the technology of the plant process for obtaining
molecular sieves. Trudy GrozNII no. 15:165-174 '63.
(MIRA 17:5)

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MITROFANOV, M.G.; BONDARENKO, N.I.; KOZHEVNIKOV, G.S.

Operation of an industrial electric cleaning plant. Trudy
GrozNII no. 15:143-147 '63. (MIRA 17:5)

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MITROFANOV, M.G.; BONDARENKO, N.I.; MAKAR'YEV, S.V.

Technological process of dewaxing diesel fuels with crystal
carbide. Trudy GrczNII no. 15:137-142 '63. (MIRA 17:5)

MITROFANOV, M.G.; MIRSKIY, Ya.V.; DOROGCHINSKIY, A.Z.; DRONIN, A.P.
MAKAR'YEV, S.V.; LUGOVOY, B.I.

Selecting the best arrangement for separating gasoline fractions
in molecular sieves. Trudy GrozNII no. 15:84-92 '63.
(MIRA 17:5)

ACCESSION NR: AR4025724

shortness of the paraffin chains. Authors' summary.

DATE ACQ: 03Mar64

SUB CODE: *FP*

ENCL: 00

ACCESSION NR: AR4025724

S/0081/64/000/002/P022/P023

SOURCE: RZh. Khimiya, Abs. 2P188

AUTHOR: Mitrofanov, M. G.; Artem'yeva, O. A.; Mulina, T. A.

TITLE: A study of the oil fractions of Anastasian petroleum

CITED SOURCE: Tr. Groznensk. neft. n.-i, in-t, vy*p. 12, 1963, 126-134

TOPIC TAGS: petroleum, petroleum refining, Anastasian crude, cylinder oil, D-11 oil

TRANSLATION: The column distillate of Anastasian petroleum can be used without purification as cylinder oil, Brand 24. After prolonged absorptive purification, 55% can be separated as oil having a viscosity index of 44.7 and a solidification temperature of 22C, which corresponds to the GOST 5304-54 for oil D-11. The residue boiling point exceeds 411C; after absorptive purification and deparaffinization of the residue, 14.4% separates as an oil with a viscosity index of 70 and a solidification temperature of 19C. The distinguishing characteristic of the petroleum and aromatic fractions of Anastasian crude isolated from the column distillate and the residue is the comparatively high content of cyclic hydrocarbons and the

Card 1/2

KAZANSKIY, B.A.; DOROGUCHINSKIY, A.Z.; ROZENGART, M.I.; GITIS, K.M.;
LYUTER, A.V.; MITROFANOV, M.G.

Effect of the length of an alumina-chromia-potassium
catalyst layer on the aromatization of n-heptane.
Kin.i kat. 4 no.2:315-318 Mr-Ap '63. (MIRA 16'5)

1. Institut organicheskoy khimii AN SSSR imeni N.D.Zelinskogo i
Groznenkiy neftyanoy nauchno-issledovatel'skiy institut.
(Heptane) (Aromatization) (Catalysts)

GONIKBERG, M.G.; DOROGCHINSKIY, A.Z.; GAVRILOVA, A.Ye.; KOMANENKOVA, R.A.;
MITROFANOV, M.G.; KUPRIYANOV, V.A.

Determination of the naphthalene and alkyl naphthalene content of
stocks and dealkylation products. Neftekhimiia 3 no.6:916-921 N-D
'63. (MIRA 17:3)

1. Institut organicheskoy khimii AN SSSR im. N.D.Zelinskogo i
Groznenkiy neftyanoy nauchno-issledovatel'skiy institut.

A process of thermal dealkylation... S/065/62/000/004/001/004
E075/E136

pressure in benzene column 0.1-0.3 kg/cm²; temperature in benzene column, top 87 °C, bottom 130 °C; pressure in the recycle stock separation column 0.1-0.3 kg/cm²; temperature in the recycle stock separation column, top 260°, bottom 304 °C; molar ratio hydrogen/feedstock 4:1; space velocity of feed 4.0 h⁻¹; consumption of hydrogen 2.1% wt of feedstock; yield of benzene 78.7% wt of toluene. It was calculated that high grade benzene produced by the process from petroleum derived toluene is considerably cheaper than that obtained currently in the coking industry. It was established that thermal demethylation of methyl naphthalenes (700 °C, 50 atm) gives naphthalene with a yield of ca. 50% wt of feedstock after one cycle. The most suitable raw materials for the process are aromatic products obtained during reforming, pyrolysis and catalytic cracking processes. It is expected that the dealkylation process will constitute an important source of benzene and naphthalene for the Soviet petro-chemical industry. There are 1 figure and 1 table.

Card 2/2

S/065/62/000/004/001/004
EO75/E136

AUTHORS: Gonikberg, M.G., Dorogochinskiy, A.Z.,
Mitrofanov, M.G., Gavrilova, A.Ye., Dronin, A.P.,
Kupriyanov, V.A., Nekar'yev, S.V., Zamanov, V.V.,
and Vovk, I.M.

TITLE: A process of thermal dealkylation of aromatic
hydrocarbons

PERIODICAL: Khimiya i tekhnologiya topliv i masel,
no.4, 1962, 11-15

TEXT: As a result of investigations carried out in the
years 1953-1960 in IOKh AN SSSR and GrozNII, a technological
scheme was developed for an industrial process of thermal
dealkylation of monocyclic aromatics such as toluene and methyl-
naphthalenes. A pilot plant for the process producing
30 000 tons of benzene per annum consists of a small number of
simple units. It contains a tubular furnace of only
3 mil. cal/hour capacity. The main production indices for the
plant are as follows: reactor pressure 50 atm; maximum
temperature 790 °C; separator temperature 35 °C;
Card 1/2

IGONON, P.G., inzh.; SVITKIN, V.V., inzh.; MITROFANOV, M.G., kand.tekhn.nauk;
SLEPTSOV, Yu.S., inzh.; KOLOZHVARI, A.A., inzh.; PASHENKO, M.A., inzh.;
ZHIVOLUPOV, M.A., inzh.; Prinsipali uchastiye: MUSHENKO, D.V.;
TSYSKOVSKIY, V.K.; SHCHEGLOVA, TS.N.; FREYDIN, B.G.; PYL'NIKOV, V.I.;
LEVINA, M.I.; LEVIN, A.I.; LUR'YE, Ye.I.; BAYKINA, T.A.; UDOVENKO, S.A;
MARCHENKO, T.A.

Effect of the method of liquid paraffin oxidizing on the yield and
quality of the obtained fatty acids. Masl.-zhir.prom. 28 no.11:20-23
N '62. (MIRA 15:12)

1. Groznenskiy nauchno-issledovatel'skiy neftyanoy institut (for Igonin, Svitkin, Mirtofanov, Sleptsov, Kolozhvare, Pashenko, Zhivolupov).
2. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh protsessov (for Mushenko, TSyskovskiy, Shcheglova, Freydin, Pyl'nikov, Levina, Levin).
3. Lengiprogaz (for Lur'ye, Baykina).
4. VNIISINZh (for Udoenko, Marchenko).

(Paraffins)

(Acids, Fatty)

SHESTAK, N. P.; CHERTORIZHSKIY, A. V.; MIRSKIY, Ya. V.; MITROFANOV,
M. G.; DEMENKOV, I. A.

Adsorption properties of synthetic zeolites-molecular sieves
and their use in the advanced-stage dehydration of monomers.
Neftekhimia 2 no.4:512-518 J1-Ag '62.

(MIRA 15:10)

1. Groznenskiy nauchno-issledovatel'skiy neftyanoy institut i
Groznenskiy khimicheskiy zavod.

(Zeolites) (Monomers)

Preparation of experimental samples...

S/081/62/000/021/031/069
B149/B101

which the strong solution can be taken to a vessel where it can be diluted with condensate to a working concentration. The latter solution is pumped through a rotameter and fed into a jet mixer together with the Na-silicate solution. The mixture then passes into a continuously working paddle mixer where the gel is formed as a thin pulp. This pulp is transferred to the mixer in which the aluminate solution was previously prepared. The pulp is heated in the mixer until the gel crystallizes. The mass is then transferred into the collectors which previously contained the aluminate and the zeolite is washed by 2 - 3 decantations, then filtered and washed in a filter-press. The cake is divided into two parts, one of which undergoes preliminary drying in a chamber dryer and is transferred on to crusher-roll mill while the other is transferred directly to the mill. There the zeolite is mixed with clay into a mass which is made into tablets, and the latter are dried, calcined and sieved from crumbs in a drum sieve. Part of the zeolite is treated with CaCl_2 to prepare a selective adsorbent for separating gasoline fractions. The weight of 1 m³ of sodium zeolite is 0.73, and its sorption capacity for water is 0.25 cm³/g. 5 references. [Abstracter's note: Complete translation.]

Card 2/2

8/081/62/000/021/031/069
B149/B101

AUTHORS: Mirskiy, Ya. V., Mitrofanov, M. G., Bolotov, L. T.,
Mezhlumova, A. I., Bunin, K. F., Dul'skaya, V. N.,
Mel'nik, A. N.

TITLE: Preparation of experimental samples of molecular sieves under
industrial conditions

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 21, 1962, 319, abstract
21K106 (Novosti نفت. i gaz. tekhn. Neftepererabotka i
netekhiimiya, no. 2, 1962, 13 - 15)

TEXT: Molecular sieves are prepared in the following way: a crushed
silicate chunk is cooked in an autoclave with live steam, transferred to
a collector, diluted with steam condensate, cooled and transferred to a
container; whereupon sufficient condensate is added to make a working
solution, which is left to settle. The clean solution is pumped into
another container. A strong alkali solution is transferred from the
montejus into a mixer which has a paddle and heater, followed by the con-
densate and $Al(OH)_3$; the mixture is heated for 3 hours with stirring.

After this the Na-aluminate solution is transferred to a collector from

Card 1/2

Synthetic Zeolites: (Cont.)

BOV/6246

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Synthetic Zeolites: (Cont.)

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Synthetic Zeolites: (Cont.)

SOV/6246

COVERAGE: The book is a collection of reports presented at the First Conference on Zeolites, held in Leningrad 16 through 19 March 1961 at the Leningrad Technological Institute imeni Lensovet, and is purportedly the first monograph on this subject. The reports are grouped into 3 subject areas: 1) theoretical problems of adsorption on various types of zeolites and methods for their investigation, 2) the production of zeolites, and 3) application of zeolites. No personalities are mentioned. References follow individual articles.

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MITROFANOV, M.G.

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PHASE I BOOK EXPLOITATION

SOV/6246

Soveshchaniye po tseolitam. 1st, Leningrad, 1961.

Sinteticheskiye tseolity; polucheniye, issledovaniye i primeneniye
(Synthetic Zeolites: Production, Investigation, and Use). Mos-
cow, Izd-vo AN SSSR, 1962. 286 p. (Series: Its: Doklady)
Errata slip inserted. 2500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Otdeleniye khimicheskikh
nauk. Komisiya po tseolitam.

Resp. Eds.: M. M. Dubinin, Academician and V. V. Serpinskiy, Doctor
of Chemical Sciences; Ed.: Ye. G. Zhukovskaya; Tech. Ed.: S. P.
Golub'.

PURPOSE: This book is intended for scientists and engineers engaged
in the production of synthetic zeolites (molecular sieves), and
for chemists in general.

Card 1/1 5

Synthesis of artificial...

S/020/61/141/005/016/012
B101/B144

Na-, Ca-, or other zeolites in the form of ion exchangers can be used. After calcination at 600°C, the following physical properties were obtained: Apparent density, 0.55-0.60 cm³/g; maximum adsorptive capacity for H₂O at 20°C, 0.26 cm³/g, for H and C₇H₁₆ (calcium form) at 20°C, 0.22 cm³/g; specific moistening heat, 70-73 cal/g; index of mechanical strength according to the method of GrozNIL, 85%. The zeolites are so stable that they can be used in systems with a moved powdered adsorbent. There are 1 figure and 16 references: 10 Soviet and 6 non-Soviet. The three most recent references to English-language publications read as follows: E. L. Labine, Chem. Eng., 66, no. 16, 134 (1959); D. B. Broughton, D. B. Carson, Oil and Gas J., no. 15, 98 (1959); W. F. Franz, E. A. Christensen et al., Oil and Gas J., no. 15, 102 (1959).

ASSOCIATION: Groznenskiy nauchno-issledovatel'skiy institut (Groznyy Scientific Research Institute)

PRESENTED: July 17, 1961, by M. M. Dubinin, Academician

SUBMITTED: July 14, 1961

Card 2/2

S/020/61/141/005/016/010
B101/B144

AUTHORS: Mirskiy, Ya. V., and Mitrofanov, M. G.

TITLE: Synthesis of artificial zeolites of molecular sieves in the form of wear-resistant, microspheric powders

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 141, no. 5, 1961.
1155 - 1157

TEXT: The authors synthesized artificial zeolites with selective adsorptive capacity. The present paper describes the synthesis of a mechanically stable, powdered adsorbent consisting of 30 - 600 μ microspheric particles by atomization drying of an aqueous suspension of crystalline, powdered zeolite and highly plastic, finely dispersed clay. Addition of clay (10 - 30%) is necessary for obtaining wear-resistant, microspheric zeolites. Mechanical strength is reduced by too small additions of clay; adsorptive capacity is lowered by too large additions. The mixture is diluted with H_2O until it can be dried by atomizing. Thereafter, it is calcined at 500-650°C to obtain moisture resistance and higher strength.

Card 1/2

S/076/61/035/002/015/015
B107/B220

Separation of hydrocarbon ...

Table:	adsorbed matter	adsorption volume of pores, cm ³ /g
	n-C ₆ H ₁₄	0.24
	iso-C ₈ H ₁₈	0.02
	C ₆ H ₆	0.02
	H ₂ O	0.30
	CH ₃ OH	0.28

- Ref.: 1. R. D. Schwartz, D. J. Brasseaux, *Analyt. Chem.*, **29**, 1022, 1957;
 2. B. J. Mair, M. Shamaingar, *Analyt. Chem.*, **30**, 276, 1958;
 3. G. R. Brown and oth., *Oil and Gas J.*, **57**, 189, 1959.

[Abstracter's note: This is a full translation from the original.] There are 1 table and 3 non-Soviet-bloc references.

ASSOCIATION: Groznenskiy neftyanoy nauchno-issledovatel'skiy institut
 (Groznyy Petroleum-Scientific Research Institute)

SUBMITTED: December 29, 1959
 Card 3/3

S/076/61/035/002/015/015
B107/B220

Separation of hydrocarbon ...

mixtures were separated in both liquid and gaseous phase. In the first case, a small volume of the liquid mixture was added to the adsorbent, and the refractive index of the mixture was determined from the contact with the adsorbent. In the second case, the gaseous mixture was passed over the layer of the molecular sieve in a glass tube at 120°C. Previously, the adsorbent had been dried at 350°C and simultaneously evacuated. When passing the gas mixture through the adsorbing layer, the nonadsorbed part was collected in a receiver cooled by dry ice. Once adsorption was completed, the sorption tube was evacuated at 120°C; then the temperature was raised to 350°C and, thus, the n-heptane desorbed. For the separation of n-hexane, the hexane fraction of a directly fractionated benzine was used as basic material; besides n-hexane, this fraction contained methyl cyclopentane, 2-methyl pentane, 3-methyl pentane, and benzene. The hexane fraction was passed through the adsorbing layer for 15 minutes at a volume rate of 0.35; the subsequent temperature increase and desorption were effected in the same way as for n-heptane. Under these conditions, n-hexane was almost completely separated from the mixture. The desorbed n-hexane showed a purity of 97-98%.

Card 2/3

S/076/61/035/002/015/015
B107/B220

AUTHORS: Mirskiy, Ya. V. and Mitrofanov, M. G. (Groznyy)

TITLE: Separation of hydrocarbon mixtures by means of a molecular sieve

PERIODICAL: Zhurnal fizicheskoy khimii, v. 35, no. 2, 1961, 460

TEXT: The separation of n-HC (hydrocarbons) from mixtures with iso-HC and cyclic HC is often very difficult. Recently widespread interest has been shown in the problem as to whether molecular sieves are suitable for separating petroleum fractions (Refs. 1-3). For separating n-paraffins from benzene fractions the authors used a molecular sieve made at their own institute. Such a molecular sieve adsorbs n-paraffins in dehydrated state, whereas iso-paraffins and cyclic HC are not adsorbed. The adsorbing capacity at 20°C is indicated in a table for the different substances. Chemically, this molecular sieve is the Ca form of an artificial zeolite. The separating capacity of the sieve was tested with mixtures of n-heptane with toluene and methyl cyclohexane. The change in the composition of the mixture could be easily determined from the value of the refractive index. The

Card 1/3

Production of MC-8 (MS-8) and...

S/081/62/000/001/056/067
B102/B101

after vaporization of the light fractions. [Abstracter's note: Complete translation.]

Card 2/2

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Production of MC-8 (MS-8) and...
after vaporization of the light fractions. [Abstracter's note: Complete
translation.]

S/081/62/000/001/056/067
B102/B101

Card 2/2

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134700019-6

S/081/62/000/001/056/067
B102/B101

AUTHORS: Mitrofanov, M. G., Artem'yeva, O. A.

TITLE: Production of MS-8 (MS-8) and MS-6 (MS-6) oils from
Anastas'yevskaya petroleums without making use of stabilizing
additives

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 1, 1962, 447, abstract
1M161 (Tr. Groznensk. neft. n.-i. in-t, no. 11, 1961, 112-117)

TEXT: Experiments, carried out at a test plant, showed that it is possible
to obtain MS-8 and MS-6 oils by furfural refining of the 300 - 390° and
300 - 380°C fractions of Anastas'yevskaya petroleums and subsequent after-
refining of the raffinate by H_2SO_4 and bleaching clay. For refining the
distillates of MS-8 and MS-6 oils 70 - 90 or 110% furfural, respectively,
has to be used; the consumption of H_2SO_4 is 2.0%, that of gumbrin 10%. The
MS-8 oil obtained corresponds to ГОСТ 6475-53 (GOST 6475-53) to which no
stabilizer has been added. The MS-6 oil is stable and possesses far better
viscosity characteristics at low temperatures both in the fresh form and
Card 1/2

Results of industrial test for...

S/081/62/000/002/086/107
B157/B110

MS-20 aviation lubricating oil obtained from the GrozNII Giprogrozneft' process fulfils requirements of the BTY 598-56 (VTU 598-56) specification; MS-20 aviation oil obtained from the VNII NP Giproneftezavod process does not meet coking capacity standards. The GrozNII Giprogrozneft process is recommended for use in all refineries at present under construction.
[Abstracter's note: Complete translation.]

Card 2/2

34415

S/081/62/000/002/086/107
B157/B110

11.9100

AUTHORS: Mitrofanov, M. G., Martynenko, A. G., El'kes, A. M.

TITLE: Results of industrial test for the production of MG-20 (MS 20) aviation oil from Shkapovskiy petroleum by the duo-sol or phenol refining processes

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 2, 1962, 491, abstract 2M257 (Tr. Groznensk. nef. n-i in-t, no. 11, 1961, 104-112)

TEXT: Results of an industrial experiment, conducted at the Orsk NPZ in order to compare two technological systems for producing residual oils, have shown that by using the GrozNII Giprogrozneft' system to process Shkapovo petroleum (refining of an asphaltene-free product with a phenol-cresol mixture in a propene solution), double the amount of MS-20 aviation oil is obtained than when the VNIINP Giproneftezavod process is used (strong deasphalting - phenol refining process). The main cause for the substantially lower yield of MS-20 aviation oil from the VNII NP Giproneftezavod is the need for a high degree of asphaltic material removal from the crude oil before phenol can be used to refine the product.

Card 1/2

The production of ...

S/081/62/000/005/064/112
B156/B108

and can be used for the separation of gaseous and liquid hydrocarbons. The type I zeolite in Na-form can adsorb 0.02 - 0.09 ml/g of benzene or isooctane. An important feature of the Ca-form zeolite is its capacity of adsorbing ~0.2 ml/g (at 20°C) of normal structure hydrocarbons, while isomorphous and cyclic hydrocarbons are not adsorbed. 11 references. [Abstracter's note: Complete translation.]

Card 2/2

5034
S/081/62/000/005/064/112
B156/B108

5.1190
AUTHORS: Mirskiy, Ya. V., Mitrofanov, M. G.

TITLE:

The production of synthetic zeolites as molecular sieves

PERIODICAL:

Referativnyi zhurnal. Khimiya, no. 5, 1962, 414, abstract
5K141 (Tr. Groznensk. neft. n.-i. in-t, no. 11, 1961, 75 - 76)

TEXT: It has been established that zeolites with high ion exchange prop-
erties and "molecular sieve" characteristics can be produced if sodium
aluminosilicon hydrogels are crystallized at 75 - 100°C for periods of a
few hours to several days. The most convenient method of preparing the
hydrogel is to mix an alkaline solution of Na aluminate with a solution of
Na silicate. When zeolites are produced by the crystallization of hydro-
gels of compositions of 2 - 2.4 $\text{Na}_2\text{O} \cdot \text{Al}_2\text{O}_3 \cdot n\text{SiO}_2$ with values of $n \leq 2$, a
type I zeolite is formed; this in Na-form is a 4A "molecular sieve", and
in Ca-form a 5A "molecular sieve". At values of n between 2.1 and 2.6 a
type II zeolite is formed, which in Ca-form is similar to phoazite. The
synthesized zeolites have high adsorption capacities and selectivities,
Card 1/2

KAZANSKIY, B.A.; DOROGUCHINSKIY, A.Z.; ROZENGART, M.I.; LYUTER, A.V.;
MITROPANOV, M.G.

Effect of the feed rate on the process of aromatization of n-hexane
over an aluminum-chromium catalyst. Kin. i kat. 2 no.2:258-262
Mr-Ap '61. (MIRA 14:6)

1. Institut organicheskoy khimii AN SSSR imeni N. D. Zelinskogo
i Gorznevskiy neftyanoy nauchno-issledovatel'skiy institut.
(Hexane)
(Aromatization)

DOROGOCHINSKIY, A.Z.; GONIKBERG, M.G.; MITROFANOV, M.G.; KUPRIYANOV, V.A.;
VOVK, L.M.

Homogenous demethylation of toluene. Report No. 2. Experiments with gas cycling. Neftekhimiia 1 no.4:501-504
Jl-Ag '61. (MIRA 16:11)

1. Groznenskiy neftyanoy nauchno-issledovatel'skiy institut
i Institut organicheskoy khimii AN SSSR imeni N.D.
Zelinskogo.

GONIKBERG, M.G.; DOROGUCHINSKIY, A.Z.; MITROFANOV, M.G.; GAVRILOVA, A.Ye.;
KUPRIYANOV, V.A.; MIKHAYLOVSKIY, V.K.; VOVK, L.M.

Homogenous demethylation of toluene. Report No.1. Basic indices
of the process at 750-790 C. Neftekhimiia 1 no.1:46-53 Ja-F
'61. (MIRA 15:2)

1. Institut organicheskoy khimii AN SSSR imeni N.D.Zelinskogo
i Groznenskiy neftyanoy nauchno-issledovatel'skiy institut.
(Toluene) (Methyl group)

15.6400

24826

S/081/61/000/011/031/040

B103/B202

AUTHORS: Bogdanov, N. F., Mitrofanov, M. G., Stepuro, S. I.,
Sergeyeva, M. I.

TITLE: Production of low-solidifying oils by the method of
extractive deparaffination

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 11, 1961, 483, abstract
11M192 (11M192). ("Tr. Groznensk. neft. n.-i. in-t", vyp. 7,
1960, 93 - 103)

TEXT: In the course of the extractive deparaffination at the Groznenskiy
neftemaslozavod (Groznyy Petroleum Refinery) up to 65 % oil with a
solidification point of -30 to -32°C is obtained from the MC-20 (MS-20) oil
of the Zhiriovskaya petroleum freed from paraffin when treated with
dichloroethane benzene at temperatures of from -35° to -38°C. It is ex-
pedient to apply extractive deparaffination as an additional treatment to
the conventional processes of deparaffination in the apparatus available.
A scheme is given. [Abstracter's note: Complete translation.]

Card 1/1

MITROPANOV, M.G.; ARTEM'YEVA, O.A.

Production of MS-8 and MS-6 oils from Anastasiyevka petroleum
without the use of stabilizing additives. Khim.i tekhn. topl.i
masel 5 no.12:15-18 D '60. (MIRA 13:12)

1. Groznenskiy nauchno-issledovatel'skiy neftyanoy institut.
(Lubrication and lubricants)

MIRSKIY, Ya.V.; MITROFANOV, M.G.

Molecular sieves, a new kind of adsorbents. Khim.i tekhn.topl.i masel
5 no.10:16-21 O '60. (MIRA 13:10)

1. Grogenskiy nauchno-issledovatel'skiy neftyanoy institut.
(Petroleum--Refining) (Adsorbents)

KAZANSKIY, B.A.; DOROGUCHINSKIY, A.Z.; ROZENGART, M.I.; LYUTER, A.V.;
MITROFANOV, M.G.

Aromatization of narrow hexane fractions of Grozny gasoline on
an alumina-chromic oxide catalyst. Kin.i kat. 1 no.2:204-299
Jl-Ag '60. (MIRA 13:8)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR i
Groznen'skiy nauchno-issledovatel'skiy neftyanoy institut.
(Aromatization)
(Hexane)

MITROPANOV, M.G.; HEREZYUK, F.A.

Use of electrical precipitation in the purification of petroleum
products. Trudy GrozNII no.4:198-202 '59.

(MIRA 12:9)

(Petroleum--Refining)

MITROFANOV, M.G.; ARTEM'YEVA, O.A.; KARAYBOG, Ye.V.

Producing MK-8 motor oil from Malgobek, Zhirnovsk, and
Anastasiyevskaya crudes. Trudy GrozNII no.4:183-189 '59.
(MIRA 12:9)

(Lubrication and lubricants)

KREYN, S.E.; ARTEM'YEVA, O.A.; MITROPANOV, M.G.; MARTYNEKO, A.G.

Ways for improving the lubricating performance of residual oils.
Trudy GrozNII no.4:171-183 '59. (MIRA 12:9)
(Lubrication and lubricants)

MITROFANOV, M.G.; STEPURO, S.I.; SEROV, V.V.; KVASHNIN, K.V.

Experience in the industrial purification of asphalt from sulfur-bearing crude with the aid of a selective double-solvent. Trudy GrozNII no.4:166-171 '59. (MIRA 12:9)
(Asphalt) (Petroleum--Refining)

MITROPANOV, M.G.; LOGVINOV, M.I.

Improved technological layout for the production of lubricating oils, paraffin, and ceresin from sulfur-bearing Romashkino-type crudes. Trudy GrozNII no.4:163-166 '59. (MIRA 12:9)
(Petroleum--Refining) (Petroleum products)

MITROFANOV, M.G.

Ways for the further development and improvement of the production
of paraffins and oils in Grozno refineries. Trudy GroznII no.4:157-162
'59. (MIRA 12:9)

(Groznyi--Petroleum--Refining)
(Lubrication and lubricants)

MITROPANOV, M. G.
IGCININ, P.G.; DASYATOVA, I.D., inzh.; MITROPANOV, M.G., kand. tekhn. nauk.

Changes in catalyst concentration in the process of the oxidation
of paraffin wax. Masl.-zhir. prom. 24 no.3:26-28 '58. (MIRA 11:4)

1. Groznenskiy nauchno-issledovatel'skiy institut.
(Paraffin wax) (Oxidation) (Catalysts)

SOV/65-58-5-7/14

Manufacture of the MK-8 oil from **Malgobek, Zhirnovskaya, an' Anastas'yevskaya** Petroleums.

distillate with 10% sulphuric acid and neutralisation with alkali. This oil does not possess the necessary properties required by the norms. Mixtures of fractions between 320° and 380° from heavy **Malgobek** petroleum possessed the required viscosity and had a solidification point of -24°C. The properties of the oil obtained after deparaffination and purification with 2.5% sulphuric acid are given also in Table 5; this oil possessed the required properties. There are 5 Tables and 1 Soviet reference.

ASSOCIATION: Groznii

Card 3/3

SOV/65-58-5-7/14

Manufacture of the MK-8 Oil from Malgobek, Zhirnovskaya, and Anastas'yevskaya
Petroleums.

Zhirnovskaya petroleum fractions, and also from the deparaffinated distillate of heavy Malgobek petroleum. Table 1 gives the yields and properties of the oil fractions of Zhirnovskaya petroleum before and after deparaffination with crystalline carbamide. It was found that the deparaffinated fraction at 350°-375°C showed a solidification point and viscosity corresponding to the norms for the MK-8 oil. Table 2 - yields of properties of distillates of MK-8 oil from Zhirnovskaya petroleum after deparaffination with crystalline carbamide. The prepared samples were tested for their stability by oxidation according to GOST 981-55; satisfactory results were obtained - Table 3. The low-viscosity oily fractions of Anastas'yevskaya petroleum were also investigated; yields and properties are given in Table 4. Mixtures of the fractions boiling between 300° and 390°C were prepared which satisfied the requirements of norms for the MK-8 oil. This mixture had a solidification point of -55°C and its viscosity at 20°-50°C corresponded to 31 and 9.2 centistoke. This oil, having the characteristics given in Table 5, was obtained after purification of the

Card 2/3

SOV/65-58-65-5-7/14

AUTHORS: Mitrofanov, M. G; Artem'yeva, O. A; Karaybog, Ye. V.

TITLE: Manufacture of MK-8 Oil from Malgobek, Zhirnovskaya, and Anastas'yevskaya Petroleums (Polucheniye masla MK-8 iz Malgobekskoy, Zhirnovskoy i Anastas'yevskoy neftey)

PERIODICAL: Khimiya i Tekhnologiya Topliv i Masel, 1958, Nr.5. pp. 42 - 47. (USSR).

ABSTRACT: The MK-8 oil is characterised by its low solidification point (-55°C), and by the position of the viscosity curve (ratio of the kinetic viscosity at -20°C to the kinetic viscosity at 50°C and should not exceed 60°C). In 1956 investigations were carried out in GrozNII (Ref.1) which showed that petroleums from various regions could be deparaffinated by the carbamide method, and that low viscosity oils, such as transformer oils, with a solidification point of -45°C , could be obtained. It was found that narrow fractions of the Zhirnovskaya petroleum possess the lowest solidification point (-54° to -62°), and that their viscosity at 50°C was either near or equal to that required by the norms for the MK-8 oil. Experiments are now being carried out to investigate the possibility of producing MK-8 oil from deparaffinated

Card 1/3

80318

SOV/81-59-7-24830

5.3300(B)

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 7, p 466 (USSR)

AUTHOR: Mitrofanov, M.G.

TITLE: The Dearomatization of "Kalosha" Gasoline by Means of Glycol

PERIODICAL: Vestn. Sovnarkhoza Checheno-Ingushetii, 1958, Nr 3, pp 19 - 20

ABSTRACT: In connection with the utilization of petroleum from new layers with considerable content of aromatic components (Ozeksuat, Karabulak and Achaluk petroleum) for the production of solvent gasolines, GrozNII tested a method for dearomatization of "kalosha" gasoline by means of extracting the distillate with glycol. In the distillate 7% of aromatic hydrocarbons were contained, in the purified gasoline ~0.8%. The concentrate of aromatic hydrocarbons which has an octane number of 74 (motor method) can be used as a component of aircraft or export gasolines. The data obtained on an experimental installation showed that it is expedient to use this process also for the de-aromatization of extraction gasoline and other solvent gasolines. The diagram of the installation is given.

A. Nagatkina

Card 1/1

68962

SOV/81-59-23-83541

An Investigation of the Dynamics of the Change in Chemical Composition of the Raw Material and the Semi-Finished Products in the Production Process of MS-20 Aircraft Oil

hydrocarbons 46.2, naphthene-aromatic hydrocarbons 39, resins soluble in propane 2.8, asphalt-resinous substances insoluble in propane 12. The following substances contained in RM passed into the refined product (%): 96.5 of the naphthene-paraffin hydrocarbons, 36.1 of the naphthene-aromatic hydrocarbons and 40 of the resins soluble in propane. The naphthene-paraffin and the naphthene-aromatic hydrocarbons of the refined product have 64 - 72 and $\sim 62\%$, respectively in the paraffin chains of the total number of C atoms in the molecule, and the naphthene-paraffin and naphthene-aromatic hydrocarbons of the extract ≤ 58 and $\sim 36\%$. In the case of deparaffinization 67.2% naphthene-paraffin hydrocarbons and 64% propane-soluble resins of the total content in the refined product remained in oil. The finished MS-20 oil contained (%): naphthene-paraffin hydrocarbons 70.3, naphthene-aromatic hydrocarbons 27.1, propane-soluble resins 0.7, asphalt-resinous substance 1.9.

A. Ravikovich

Card 2/2

15-6200

68962
SOV/81-59-23-83541

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 23, pp 443 - 444 (USSR)

AUTHORS: Artem'yeva, O.A., Mitrofanov, M.G., Martynenko, A.G.

TITLE: An Investigation of the Dynamics of the Change in Chemical Composition of the Raw Material and the Semi-Finished Products in the Production Process of MS-20 Aircraft Oil

PERIODICAL: V sb.: Sostav i svoystva vysokomolekul. chasti nef'ti. Moscow, AS USSR, 1958, pp 90 - 108

ABSTRACT: In the production of MS-20 aircraft oil from raw material mixture (RM) of Karachukhuro-Surakhany petroleum and Groznyy cylinder distillate the following consecutive operations are applied: RM is purified by a phenolcresol mixture in a solution of propane, the refined product is de-paraffined in a solution of dichloroethane-benzene and is then purified by contact with gumbrin. The chemical group composition of the products is determined prior to and after each of the enumerated operations by the method of chromatographic separation and the hydrocarbon groups separated are analyzed by the methods η -d-n and n-d-M. RM (d_4^{20} 0.924, viscosity 36.2 centistokes at 100°C, pour point 46) contained (%) naphthene-paraffin

Card 1/2

MITROFANOV, M. G., MARTINENKO, A. G. and ARTEM'YEVA, O. A.,

"Investigation of the Dynamics of Changes in the Chemical Composition of Crudes and Intermediate Products in the Production of Aviation Oil MS-20." p. 90
Composition and Properties of the High Molecular Weight Fraction of Petroleum;
Collection of papers on the Composition and Properties of Crudes and Petroleum
Products, Moscow, Izdvo An SSSR, 1958, 370pp (In-ta nefi)
2nd Collection of papers publ. by AU Conf. Jan 56, Moscow.

This paper is a study of the effect of production processes on the quality of group composition in MS-20. MS-20 is described as the final product obtained from a blend of concentrates from Karachukhur-Surakhan petroleum and Grozny raff cylinder stock. After refining by selective solvents, deparaffination, and contact refining with clay powder, the MS-20 shows the following group composition (percent by ~~wt~~ weight): naphthene-paraffin hydrocarbons 70.3; Naphthene-aromatic hydrocarbons 27.1; propane soluble tars 0.7; and tarry substances not soluble in propane 1.9.

65-12-2/9

On the Choice of Oils of an Optimum Chemical Composition and Methods of Their Production.

composition of the raw material and the determination of the available naphthene-paraffinic and aromatic components; 2) an investigation of physico-chemical and operating properties of the individual structural-group fraction of hydrocarbons in the pure state and mixed in various proportions under laboratory conditions and on modelling equipment of the ΠB type and similar; 3) on the basis of the results obtained, the choice of optimum compositions of the above fractions with and without additives should be made; 4) testing of the chosen composition of oils with and without additives on single-cylinder engines and the introduction of the necessary correction in the composition, and 5) the production under industrial conditions of experimental lots of oils of the chosen composition and their testing on single-cylinder and full-scale engines. There are 1 figure, 10 tables and 8 Slavic references.

AVAILABLE: Library of Congress

Card 2/2

MITROFANOV, M. G.

65-12-2/9

A AUTHORS: Kreyn, S.E., Mitrofanov, M.G. and Puchkov, N.G.

TITLE: On the Choice of Oils of an Optimum Chemical Composition and Methods of Their Production (O podbore masel optim-al'nogo khimicheskogo sostava i putyakh ikh proizvodstva)

PERIODICAL: Khimiya i Tekhnologiya Topliva i Masel, 1957, No.12, pp. 13-22 (USSR).

ABSTRACT: The importance of group-chemical composition of lubricating oils and not only their physico-chemical constants, for the evaluation of their performance characteristics is discussed and illustrated by some examples. On the basis of the data cited it is concluded that the production of oils of better performance characteristics is possible with the existing production methods. It is pointed out that at present the production of oils of low performance is caused by an incorrect approach to the evaluation of oil quality. On choosing oils, their quality is evaluated on the basis of their physico-chemical indices and not their chemical composition and results of tests on corresponding mechanisms in spite of the fact that the former do not determine the behaviour of oils under operating conditions. The most rational scheme for the investigation of lubricating oils and the choice of their optimum composition can be as follows: 1) an investigation of group-chemical

Card 1/2

... МЛМ. состав и эксплуатат. свойства смазочн. масел.
М., Gostoptekhnizdat, 1957, 108-113.

Abstract : In fresh MS-20 oil and in oil that had been in use, for 50 hours, in an engine, a determination was made of the basic indices according to the GOST, of groupwise chemical composition and structural groupwise composition of narrow fractions, in accordance with the $V_k = n = d$ and $n = d = M$ methods. To separate the fractions the oil was extracted, in a column, with liquid propane at 99-550 and the propane

Card 1/2

that had passed through the adsorbers contained only naphthene-paraffin hydrocarbons (NPH), and after the extraction there remained in the column only the propane-insoluble asphaltic-tarry substances (ATS). Naphthene-aromatic hydrocarbons (NAH) and tars (T) were extracted from the adsorbent with benzene and a 1:1 mixture of dichloroethane and benzene. Analysis of fresh oil yielded the following results (in %): NP 72, NA 27, T 0.8, AT 0.2; while spent oil was found to contain: NP 58.6, NA 32.9, T 0.7, AT 7.8. A comparison is shown of the composition of fresh and spent oil, according to hydrocarbon groups with different content of naphthenic and aromatic rings.

Card 2/2

S/028/60/000/03/018/029
D041/D006

First Results of the Work

tion will be paid to the use of standardized parts and
units in new designs. The parts and component units of
the cranes will be standardized to reduce the variety of
materials used by the plant. ✓

Card 2/2

S/028/60/000/03/018/029
D041/D006

25(6)
28(1)

AUTHOR: Mitrofanov, L.S.

TITLE: First Results of the Work

PERIODICAL: Standartizatsiya, 1960, Nr 3, pp 44-45 (USSR)

ABSTRACT: This article contains information on the activities of the standardization and normalization team, established at Kamyshinskiy kranovoy zavod (Kamyshin Crane Plant) in May 1959. The first task of the team consisted in reorganizing the filing and use of standards. They then developed "normali" (plant standards) for fittings, welded part, etc. By the end of March 1960, 104 plant standards will be in use. Until now the plant has had no specifications of its own for hoisting cranes, and used those of Odesskiy kranovoy zavod (Odessa Crane Plant), but 18 specifications have now been approved for cranes produced by the Kamyshin Plant. Special atten-

Card 1/2

ACC NR: AP6029928

(A)

SOURCE CODE: UR/0413/66/000/015/0090/0090

INVENTORS: Karlin, A. V.; Mitrofanov, L. A.; Trofimov, V. M.

ORG: none

TITLE: Method for obtaining low-molecular weight α, ω -dihydroxypolysiloxanes.
Class 39, No. 184453 ¹/₆

SOURCE: Izobret prom obraz tov zn, no. 15, 1966, 90

TOPIC TAGS: siloxane, water, polymerization, basic catalysis, catalysis

ABSTRACT: This Author Certificate presents a method for obtaining low-molecular weight α, ω -dihydroxypolysiloxanes from cyclosiloxanes, e.g., octamethylcyclotetrasiloxane or dimethyl phenylcyclotetrasiloxane at high temperatures and pressures. To simplify the process, the cyclosiloxane is reacted directly with water in the presence of catalytic amounts of alkali.

SUB CODE: .07/ SUBM DATE: 18Jun65

Card 1/1

UDC: 678.84

KARLIN, A. V., kand. tekhn. nauk; MITROFANOV, L. A.

Preparation of pure dimethylcyclodioxanes. Khim. prom. no.3:
166-171 Mr '63. (MIRA 16:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteti-
cheskogo kauchuka imeni Lebedeva.

(Silicon organic compounds)

13850-13

ACCESSION NO: AP3000942

the depolymerization of the hydrolyzate were carried out. It was shown that the latter's composition and properties are determined not only by the DDS/water ratio and reaction temperature but also to a great extent by the agitation rate. The following process was developed: DDS and water in a 1/2 ratio are fed continuously to a cooled, stirred vessel where DDS hydrolyzes at 200; after separation from the 2% HCl formed, the hydrolyzate is neutralized; the neutralized hydrolyzate is depolymerized with 2% KOH as the DMCS are distilled off (laboratory conditions, 20 mm Hg and a pot temperature of 90 to 1000). After drying, the distilled DMCS, whose trifunctional compound content is equal to or less than 0.02 mol %, are used to make SBC rubber. When the hydrolyzate volume reaches 1/150 of its initial value, the residue is further depolymerized (laboratory pot temperature, 150 to 1900) to distill a second DMCS fraction from the irreversible-polymer residue. The SBC rubber met VTU LU 51-57 specifications. Orig. art. has: 9 figures, 3 formulas, and 1 table. 15

ASSOCIATION: YELISE

SUBMITTED: 00

DATE ACQ: 31 May 63

ENCL: 00

SUE CODE: 00

NO REF SOV: 009

OTHER: 009

Card 2/17/64

NO REF SOV:

L-9588-63 REF/REF(1)/REF(2)/REF(3)/REF(4)/REF(5)
 AFFIC/ED-2a-4/7a-4/7b-4-22/23/24/25
 ACCESSION NO: AP3000342

8/0064/63/000/003/0006/0011

AUTHOR: Moslin, A. Y. (Candidate of technical sciences); Mitrofanov, L. A.

TITLE: Production of pure dimethylcyclosiloxanes

SOURCE: Khimicheskaya promyshlennost', no. 3, 1963, 6-11

TOPIC NAME: dimethylsiloxanes, dimethylsiloxane rubber, dimethyldichloro-
silane, hydrolysis, depolymerization, SEM, monomer purity

ABSTRACT: Because the properties of dimethylsiloxane rubber are greatly affect-
 ed by the purity of the monomer, a process for making pure dimethylcyclosiloxanes
 (DMCS) was developed at NIIEK. The process is based on the difference in the
 behavior of DMCS and their trifunctional contaminants in the presence of aqueous
 KOH. The difference is that while the contaminants polymerize irreversibly, the
 DMCS enter the equilibrium: polymer - reversible reaction - DMCS, which is
 shifted to the right on DMCS distillation. Preliminary laboratory and pilot-
 plant studies of the hydrolysis of impure dimethyldichlorosilane (DDS) and of

MITROFANOV, L., zasluzhennyy master professional'no-tekhnicheskogo
obrazovaniya RSFSR (Leningrad)

Planning the industrial training classes. Prof.-tekhn. obr. 22
no.1: Ja '65. (MIRA 18:4)

1. MYTROFANOV, K. T.
2. USSR (600)
4. Geology, Structural - Kuybyshev Province
7. Report on the work of the Kinel' electric geophysical exploration party in 1943.
[Abstract]. Izv. Glav. upr. geol. fon. no. 3. 1947
9. Monthly List of Russian Accessions, Library of Congress, March 1953, Uncl.

L 21805-66

ACC NR: AP6012187

resonance procedure makes it possible to reduce the width of the observed line by ~ 0.15 m/sec. It is therefore concluded that an absorber based on barium stannate has simultaneously a large probability of the effect and a near-natural spectrum width. Orig. art. has: 1 figure.

SUB CODE: 20/ SUBM DATE: 25Feb66/ ORIG REF: 005

Card 3/3

PB

L 21805-66
ACC NR: AF6012187

however, no account was taken of the doublet character of the tin-oxide spectrum of the SnO_2 source used there. The use of an Mg_2Sn source in conjunction with a resonance counter developed by some of the authors (PTE, no. 4, 55, 1965) has made it possible to determine with great accuracy the form of the spectra of BaSnO_3 , SrSnO_3 , and CaSnO_3 . Since the use of a resonance counter reduces the width of the observed spectrum, the effective width of the source emission line was approximately 0.18 mm/sec. The measurements have shown that the widths of the absorption spectra of the stannates are lower than those reported earlier, and in BaSnO_3 there was observed a single line of nearly natural width. Thus, barium stannate combines the favorable properties of the magnesium stannide and tin oxide emitters. Tests were then made of a BaSnO_3 source prepared in accordance with the usual ceramic technology. Comparison of this source with an Mg_2Sn source, whose transmission spectrum was 0.36 mm/sec wide, has shown that the BaSnO_3 source has at room temperature (293K) approximately the same probability of emission of resonance γ quanta and the same emission-line width as the Mg_2Sn source at liquid-nitrogen temperature. Further measurements with the BaSnO_3 source were carried out with a resonance counter based on the same compound. Since the probability of the effect is larger for barium stannate than for Mg_2Sn at room temperature, the BaSnO_3 resonance counter has a higher efficiency for recording recoilless radiation (~15%). This

Card 1/3

L 21805-66 EWT(m)/EWP(t) DIAAP/IJP(c) JD
 AOC NR: AP6012187 SOURCE CODE: UR/0386/66/003/008/0323/0326

AUTHOR: Plotnikova, M. V.; Mitrofanov, E. E.; Shpinel', V. S.

ORG: Scientific Research Institute of Nuclear Physics of the Moscow State University im. M. V. Lomonosov (Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta)

TITLE: Barium stannate²¹ as a source for the measurement of the Mossbauer effect on Sn¹¹⁹

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 3, no. 8, 1966, 323-326

TOPIC TAGS: barium compound, tin compound, Mossbauer effect, Mossbauer spectrum, Gamma interaction, line width

ABSTRACT: The investigation was prompted by the desire to obtain for Mossbauer-effect research a source of recoilless γ quanta that would combine the advantages of the presently used SnO_2 or Mg_2Sn and be free of their shortcomings. The authors have repeated for this purpose earlier investigation of the stannates of barium, strontium, and calcium, whose highly symmetrical crystal lattices cause the influence of the quadrupole interaction on the width of their spectral lines to be small (Shpinel' et al., ZhETF v. 44, 1889, 1963). In the earlier study,

Card 1/3

ACC NR: AP6023922

spectral lines in the initial glass are broader and the splitting is greater than in the heat-treated glass. The shift observed in the spectra is apparently due to the fact that in the initial glass the ionic character of the Sn-O bond is greater than in cassiterite. The large splitting of the spectrum indicates large gradients of electric fields acting on the tin nuclei in the vitreous state of the sample. The line broadening in the initial glass is due to the lack of rigorous ordering in the arrangement of the atoms closest to tin. The heat treatment causes ordering around the tin atoms to take place, i. e., cassiterite nucleation centers are formed, and this change in the short-range order is recorded in the change of the Mössbauer effect. This is followed by a growth of cassiterite crystals, which become large enough to serve as centers for the growth of the main crystalline phase (spodumene). Further treatment causes a complete crystallization of the glass. Orig. art. has: 2 figures.

SUB CODE: 11/ SUBM DATE: 11Oct65/ ORIG REF: 006/ OTH REF: 008

Card 2/2 afs

ENT(1)/ENT(m)/ENP(e) IJP(c) WH
 ACC NR: AP6023922 SOURCE CODE: UR/0363/66/002/007/1277/1279

AUTHOR: Gendler, T. S.; Mitrofanov, K. P.; Plotnikova, M. V.; Tykachinskiy, I. D.; Fedorovskiy, Ya. A. 37 E

ORG: Scientific Research Institute of Nuclear Physics (Nauchno-issledovatel'skiy institut yadernoy fiziki); State Scientific Research Institute of Glass (Gosudarstvennyy nauchno-issledovatel'skiy institut stekla)

TITLE: Study of the initial stages of glass crystallization by means of the Mossbauer effect 15 17

SOURCE: AN SSSR. Izv. Neorg materialy, v. 2, no. 7, 1966, 1277-1279

TOPIC TAGS: Mossbauer spectrum, glass, catalyzed crystallization, tin compound

ABSTRACT: By combining data on gamma resonance with x-ray structural analysis, which provides information on the long-range order, new information can be obtained on the early stages of crystallization in pyroceramics. The object of the study were samples of lithium aluminum silicate glass close in composition to spodumene. The catalyst used was SnO_2 (5 wt. %) because the resonance absorption of gamma rays by Sn^{119} nuclei could be thus observed. Comparison of the Mossbauer spectra of the initial glass and of glass subjected to heat treatment (1 hr at 750°C) showed that (1) the spectrum of the initial glass is displaced by 0.06 mm/sec to the left relative to the heat-treated glass, whose spectrum coincides with that of crystalline SnO_2 (cassiterite); (2) the

UDC: 54-161.6:548.0:531

Card 1/2

I 15328-66 BPT(d)/BPT(m)/BPT(v)/BPT(k)/BPT(h)/BPT(l)/BPT(m)-6 DIAAP
 ACC NR. AP64M001

SOURCE CODE: UR/0286/65/000/022/0067/0067

AUTHORS: Mitrofanov, K. P.; Viskov, A. S.; Venevtsev, Ya. N.; Shpinel', V. S.;
 Plotnikova, M. V.

ORD: none

TITLE: Method for measuring temperature. ^{am} Class 42, No. 176442

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 22, 1965, 67

TOPIC TAGS: temperature measurement, gamma ray absorption

ABSTRACT: This Author Certificate presents a method for measuring temperature, based on the discontinuous change of the effect of resonance gamma-ray absorption with a phase transition in the absorber. To increase the accuracy of measurements, a series of absorbers with different phase transition temperatures is placed in direct thermal contact with the investigated sample. The absorbers are exposed to radiation from a resonance source of gamma-rays and the absorption effect is recorded with detectors.

SUB CODE: 20/

SUBM DATE: 14Apr64

JB

Card 1/1

UDC: 536.51 615.84

MITROFANOV, K.P.; PLOTNIKOVA, M.V.; SHPINEL', V.S.

Shape of resonance absorption spectra of 23.8 kev. gamma rays
from the isomer Sn^{119m} in tin oxide and metallic white tin.
Zhur. eksp. i teor. fiz. 48 no.3:791-795 Mr '65. (MIRA 18:6)

1. Institut yadernoy fiziki Moskovskogo gosudarstvennogo
universiteta.

MITROPANOV, K.P.; VESKOV, A.S.; PLOTNIKOVA, M.V.; VONCHENKOV, YA.N.;
SHIPINEL', V.S.

Resonance absorption of gamma quanta, and the internal fields
of ferromagnetic solid solutions of the system
 $\text{BiFeO}_3 - \text{Sr}(\text{Sn}_{1/2}\text{Mn}_{1/2})\text{O}_3$. Izv. AN SSSR. Ser. fiz. 20
no. 11 (1962) 1011-1015. (MIRA 12:11)

1. 2768-66

ACCESSION NR: AP5021330

counter may be particularly useful for interpreting complex spectra of hyperfine splitting and a precise determination of the form of broadened lines in many other cases. "The authors thank V. S. Shpinel' for reviewing the results of the work and express their deep appreciation to N. M. Delyagin and V. A. Bryukhanov for kindly supplying calibrated Mg₂Sn absorbers." Orig. art. has: 4 figures.

ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki, MGU
(Scientific Research Institute for Nuclear Physics, MGU)

SUBMITTED: 22Sep64

/ENCL: 00

SUB CODE: NP

NO REF SOV: 006

OTHER: 000

PC

Card 2/2

L 2768-66 EWT(m)/T IJP(a)

ACCESSION NR: AP5021330

UR/0120/63/000/004/0055/0058
539.1.074.2

28
24
03

AUTHOR: Mitrofanov, K. P.; Plotnikova, M. V.; Rokhlov, N. I.

TITLE: An Mg sub 2 Sn counter for 23.8 keV ~~gamma~~ rays of Sn super 119

SOURCE: Izibory i tekhnika eksperimenta, no. 4, 1965, 55-58

TOPIC TAGS: magnesium compound, gamma detector, resonance absorption, gamma counter, gamma spectrum

ABSTRACT: A resonance counter¹⁹ operating in the Geiger region was constructed for recording 23.8 keV nonrecoil γ -rays of Sn¹¹⁹. A high instrumental resolution is achieved by using as the internal coating of the counter the compound Mg₂Sn, the absorption spectrum of which is in the form of a single line of intrinsic width. The procedure employed in the preparation and deposition of Mg₂Sn is described. The counting rate was measured as a function of the displacement rate of the moving counter, and the attenuation of the beam of γ -quanta passing through the moving absorber (Mg₂Sn) was determined. It is found that the resonance method of recording is preferable to the ordinary method, and that the Mg₂Sn resonance counter permits a higher resolution than ordinary methods. The

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L 01133-66

ACCESSION NR: AP5016381

effect appreciably depends on the absorber thickness. "The author wishes to thank V. S. Shpinski for his hints, A. S. Mogilev for making the mechanical part of the outfit and the counter, and N. I. Rokhlov for assembling and aligning the resonant counter and for wiring the electrical part of the outfit." Orig. art. has: 7 figures and 1 formula. 12

ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki MGU
(Scientific-Research Institute of Nuclear Physics, Moscow State University) 44, 55

SUBMITTED: 17Apr64

ENCL: 00

SUB CODE: NP, OP

NO REF SOV: 003

OTHER: 000

Cont 2/2 DP

L 01137-66 EWT(m) DIAAP

ACCESSION NR: AP5016301

UR/0120/65/000/003/0060/0064
535.343-36

AUTHOR: Mitrofanov, K. P. 4455

41
29
B

TITLE: Outfit for measuring resonance absorption of gamma rays

19.44.55

SOURCE: Pribery i tekhnika eksperimenta, no. 3, 1965, 60-64

TOPIC TACS: resonance absorption, gamma ray absorption

ABSTRACT: A semiautomatic outfit for measuring gamma-ray resonance-absorption spectra is described. The Messbauer effect is measured at speeds of 0.02-30 mm/sec. The translational motion is ensured by a UMT-22 d-c motor operating through a cam-wormgear-pulley system. The motor speed is controlled by a potentiometer connected to an electronic stabilizer. A 4-section resonant counter is used for recording gamma rays; this requires a moving-absorber construction and provides a higher accuracy of measurement. The outfit has been tested with a Fe^{57} source. Due to a high spectral sensitivity, the measured

Card 1/2

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L 7820-46

ACC NR: 1P8028113

centration is greater than 37 and 55 mole %, respectively. The resonance absorption of Fe^{57}m and $\text{Sn}^{119\text{m}}$ γ rays by solid solutions containing 100, 90, 70, and 50 mole percent BiFeO_3 was investigated at temperatures from 77 to 850°K; the experimental technique has been described elsewhere by K.P. Mitrofanov, I.V. Illarionova, and V.S. Shpinel' (Priroda i tekhnika eksperimenta, No. 3, 49 (1983); No. 3, 60 (1986)). Below the Neel point the iron absorption line was clearly resolved into six components, which are ascribed to Zeeman splitting. Above the Neel point the iron absorption line was a doublet with a separation of 0.4 mm/sec; this splitting is ascribed to quadrupole interaction. The tin absorption was broad and could not be resolved into separate components. This broadening is ascribed to superposition of many Zeeman patterns with different splitting, and effective magnetic fields were derived from the absorption contours. The magnetic field at the iron nuclei decreased with increasing temperature and vanished at the Neel point, which was found to be $650 \pm 30^\circ\text{K}$ for pure BiFeO_3 ; the magnetic field extrapolated to 0°K was close to 500 kOe and decreased only slightly in the presence of manganite. The effective magnetic field at the tin nuclei, extrapolated to 0°K, increased with increasing BiFeO_3 concentration; it was about 300 kOe for large BiFeO_3 concentrations and extrapolated to zero at a BiFeO_3 concentration of 27 mole %. The significance of the results is discussed briefly. It is known that the field at the iron nucleus is due mainly to the influence of the electron shell of the iron ion, and it is said to be obvious that the effective magnetic field at the tin nucleus is proportional to the magnitude of the indirect exchange interaction due to polarization of the electron shell of the diamagnetic ion. The tin absorption line

Card 2/3

1 7020-64 EMT(1)/EPA(z)-2/EMI(m)/ENA(d)/T/ENP(t)/ENP(z)/ENP(b)/ENA(c) DIAAF/IJP(t)

ACC NR: APG028112 JD/GG SOURCE CODE: UR/0048/65/029/011/2029/2033

44,55 44,55 44,55 44,55 44,55

AUTHOR: Nitrofanov, K.P.; Vlaskov, A.S.; Plotnikova, M.V.; Venevtsev, Yu.N.; Shpinel', V.I.

ORG: none

TITLE: Resonance absorption of gamma rays and internal fields in bismuth ferrite - strontium stannio-manganite system ferroelectric-antiferromagnetic solid solutions
 Report, Fourth All-Union Conference on Ferro-electricity held at Rostov-on-the Don
 12-16 September 1964

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 29, no. 11, 1965, 2029-2033

TOPIC TAGS: ferroelectric material, antiferromagnetic material, solid solution, bismuth, ferrite, manganese, tin, strontium, Mossbauer effect, chemical bonding, magnetic field, Curie point, Neel temperature

ABSTRACT: The magnetic field strength at the positions of the Fe and Sn ions in $\text{BiFeO}_3 - \text{Sr}(\text{SrMn}_2)_{1/3}\text{O}_3$ solid solutions was investigated with the aid of the Mossbauer effect. The powdered solid solutions, enriched in Sn^{119} and Fe^{57} , were prepared from polycrystalline materials by the usual double air-heating ceramic technique. It was verified by x-ray studies that the investigated materials were single phase solid solutions in equilibrium. These solid solutions exhibit ferroelectric and antiferromagnetic properties; the ferroelectric Curie point and the Neel point decrease with increasing manganite content and are below room temperature when the manganite con-

Card 1/1

1 6812-66
ACC NR: AP028517

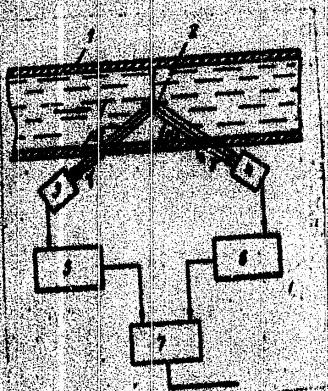


Fig. 1. Device for the contactless measurement of fluid flow rate

1 - Pipe; 2 - source; 3 and 4 - detectors;
5 and 6 - comparison circuit.

rays; the output of both units is then fed to a comparison circuit (see Fig. 1). Orig
[KT]
Art. has: 1 figure.

SUB CODE: MS, 10% SUBM DATE: 17Jul64/ ATD PRESS: 4/14/4

64-2-36 INT 1/2MA(h)/ETC(m) WU

DOC NO: AP028/17 SOURCE CODE: UR/0236/65/000/020/0098/0059

INVENTOR: Shpindel', V. S.; Mitrofanov, K. P.; Karasev, A. N. 41
B

ORIG: none

TITLE: Device for the contactless measurement of fluid flow rate. Class 42, No. 175752

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 20, 1965, 98-99

TOPIC TAGS: fluid velocity, flow measurement, flow rate, flow meter 9M 25

ABSTRACT: An Author Certificate has been issued for a device for the contactless measurement of fluid flow rate. It consists of a length of pipe through which a liquid (containing the chemical compound of an element on which it is possible to observe the Mossbauer effect) flows, a source of resonant gamma rays (which pass through the liquid), a detector to register the direction of the gamma rays propagated in the direction of the current flow, and a unit for measuring the gamma-ray counting rate. To increase measurement accuracy, a second detector is installed to register gamma

Cont 1/2 UDC: 532.574.8 2

6/11-66
AP 5028/116

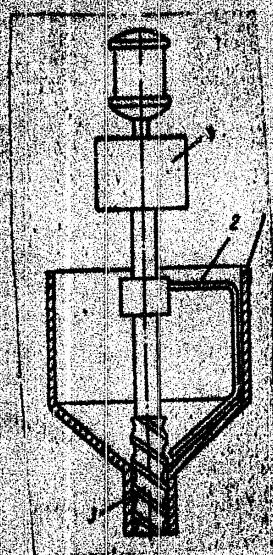


Fig. 1. Device for dispensing powdery substances
1 - Hopper; 2 - agitator; 3 - worm conveyor; 4 - vi-
brator.

the shaft of the worm conveyor. Orig. art. has: 1 figure.

SUB CODE: 00/ SUBM DATE: 1/Jul64/ ATD PRESS: 4/44

Cont. 2/2

[KT]

ACC NO: 195028316	SOURCE CODE: UR/0236/65/000/020/0098/0098
INVENTOR: Shpindel', V. S.; Mitrofanov, K. P.; Karasev, A. N.	
ORG: none	
TITLE: Device for dispensing powder materials. Class 42, No. 175751	
SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 20, 1965, 98	
TOPIC TAGS: general construction, construction equipment	
ABSTRACT: An Author Certificate has been issued for a device for dispensing powder materials. It consists of a hopper in which is located an agitator and a worm conveyor. To increase the dispensing accuracy and stability, a vibrator, for imparting vibrations to the worm conveyor in an axial direction (see Fig. 1), is mounted on	
Card 1/2	UDC: 681-2.68.22:615.4

ACCESSION NR: AP4012566

proving the earlier results and finding the reason for the abrupt change in the relative counting rate at the absorption maximum (ϵ). The material used has properties similar to that of the earlier investigation, and the addition of manganese made the samples practically single-phase and closer to equilibrium. The test procedure is briefly described. The results indicate that the jump in the value of the Mossbauer effect in solid solutions based on BiFeO_3 is the result of magnetic hyperfine splitting (but is not caused by change in the probability of the effect), and is related to an antiferromagnetic phase transition. This conclusion is supported by magnetic measurement results. Orig. art. has: 3 figures.

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Nuclear Physics Institute, Moscow State University); Fiziko-khimicheskii institut im. L. Ya. Karpova (Physicochemical Institute)

SUBMITTED: 27Sep63:

DATE ACQ: 26Feb64

ENCL: 02

Card 2/9 Z

ACCESSION NR: AP4012566

S/0056/64/046/001/0383/0386

AUTHORS: Mitrofanov, K. P.; Viskov, A. S.; Driker, G. Ya.; Plotnikova, M. V.; Fam, Zui Khiyen; Venevtsev, Yu. N.; Shpinel', V. S.

TITLE: Change in resonance absorption spectra of 23.8 keV gamma rays of Sn-119 during phase transitions in the system BiFeO_3 -

$\text{Sr}(\text{Sn}_{1/3}\text{Mn}_{2/3})\text{O}_3$

SOURCE: Zhurnal eksper. i teoret. fiz., v. 46, no. 1, 1964, 383-386

TOPIC TAGS: resonance absorption, Mossbauer effect, recoilless resonance absorption, ferroelectric antiferromagnetic compound, ferroelectricity, ferro antiferromagnetism, group II stannate, resonance absorption maximum, resonance absorption jump, Mossbauer effect jump, magnetic hyperfine splitting

ABSTRACT: This is a continuation of an earlier investigation by some of the authors (ZhETF v. 44, 2182, 1963) and is aimed at im-

Card 1/2

ALEKSANDROV, A.Yu.; DOREFMAN, Ya.G.; LEPENDINA, O.L.; MITROFANOV, K.P.;
PLOTNIKOVA, M.V.; POLAK, L.S.; TEMKIN, A.Ya.; SHPINEL', V.S.

Resonance absorption spectra of γ -quanta and the magnetic
susceptibility of solutions of some organotin compounds.
Zhur. fiz. khim. 38 no.9:2190-2197 S '64. (MIRA 17:12)

1. Institut neftekhimicheskogo sinteza AN SSSR i Institut yadernoy
fiziki Moskovskogo gosudarstvennogo universiteta.

IOFA, B.Z.; MITROPANOV, K.P.; PLOTNIKOVA, M.V.; POPACH, G.

Extraction of complex acids by oxygen-containing solvents. Radiokhimiya
Part 4: Extraction of tetravalent tin. Radiokhimiya 6 no.2:415-415 1961.
(SIR 1:4)

ALEKSANDROV, A.Yu.; MITROFANOV, K.P.; OKHLOBYSTIN, O.Yu.; POLAK, L.S.;
SHPINEL', V.S.

Some features of the Mössbauer effect on Sn^{119} nuclei in organotin
oxides. Dokl. AN SSSR 153 no.2:370-373 N '63. (MIRA 16:12)

1. Institut neftekhimicheskogo sinteza AN SSSR i Institut yadernoy
fiziki Moskovskogo gosudarstvennogo universiteta im. M.V.Lomonosova.
Predstavleno akademikom A.P.Vinogradovym.

Investigation of organo-tin compounds ... 3/020/63/148/001/027/032
B101/B186

PRESENTED: July 21, 1962 by A.P. Vinogradov, Academician

SUBMITTED: July 21, 1962

Card 3/3

Investigation of organo-tin compounds ...

S/020/63/146/001/027/032
B101/3186

had no effect on the electron distribution in the Sn-O bond. (3) The highly electronegative chlorine affected δ , even if it was not bound to Sn. Data found for $(C_4H_9)_2Sn(CH_2ClCOO)_2$: $\delta = 1.60 \pm 0.10$, $\Delta = 3.65 \pm 0.10$, and for $(C_4H_9)_2Sn(CCl_3COOH)_2$: $\delta = 1.65 \pm 0.10$, $\Delta = 3.80 \pm 0.10$. (4) For $FSn(CH_2CH_2CN)_3$ and $(C_2H_5)_3SnOH$, the doublet formed by quadrupole interaction was found to be asymmetric. It is assumed that the quadrupole interaction is accompanied by a magnetic interaction affected by m . If an internal magnetic field exists in the molecule perpendicularly to the electric field the component of the quadrupole splitting is affected by whether the transition occurs from the $m = \pm 3/2$ or from the $m = \pm 1/2$ sublevel. There are 1 figure and 1 table.

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR (Institute of Petrochemical Synthesis of the Academy of Sciences USSR); Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova (Institute of Nuclear Physics of the Moscow State University imeni M.V. Lomonosov)

Card 2/3

S/020/63/148/001/027/032
B101/B186

AUTHORS: Aleksandrov, A. Yu., Delyagin, N.N., Mitrofanov, K.P.,
Polak, L.S., Shpinel', V.S.

TITLE: Investigation of organo-tin compounds by Mössbauer resonance
absorption of gamma quanta

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 148, no. 1, 1963, 126-128

TEXT: The 23.8 kev gamma absorption spectra by Sn^{119} nuclei were investigated for 22 organo-tin compounds. $\text{Sn}^{119}\text{mO}_2$ was used as gamma source, and the absorbers were cooled to nitrogen temperature. The isomeric shift δ and the amount Δ of the quadrupole splitting were measured. Results: (1) In the compounds SnR_4 , where $\text{R} = \text{C}_2\text{H}_5$, C_6H_5 , C_3H_7 , C_4H_9 , or $\text{CH}_2\text{CH}_2\text{CN}$, δ was ~ 1.3 mm/sec, corresponding to the electron density caused by 4 Sn-C bonds on the Sn nucleus. The atoms not bound to Sn had no effect on δ . (2) In the compounds $(\text{C}_4\text{H}_9)_2(\text{C}_{n\text{H}_{2n+1}\text{COO}})_2$,

$n = 1, 7$, or 17 , δ was 1.45 ± 0.10 mm/sec, and Δ was 3.45 ± 0.20 mm/sec. n

Card 1/3

L 10384-63
ACCESSION NR: AP3002718

contained two flat plexiglass disks covered with 0.01-mm copper foil and a surface layer of SnO sub 2 enriched to 75% with the isotope Sn sup 119. The disks were 40 mm in diameter and spaced 5 mm apart; in this intervening space three tungsten wires were located, to which various combinations of voltage were applied. Test curves from two counter configurations are shown: in one, the source was moved with some velocity with respect to the counter, and in the second, the source and counter were stationary but an intermediate absorber element was caused to move. Results show the increased sensitivity of the resonant method over the usual scintillation counter; e.g., the former's insensitivity to x-rays obviates the need for a lead shield, giving a resultant increase in Gamma-ray sensitivity of 30--50%. Orig. art. has: 6 formulas and 6 figures.

ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki MGU (Scientific Research Institute of Nuclear Physics MGU)

SUBMITTED: 31Mar62 DATE ACQ: 12Jul63

ENCL: 00

SUB CODE: 00

NO REF SOV: 003

OTHER: 003

Card 2/2 ph/ae

1 1/184-61
 ACCESSION NR: AF3002718

INT(M)/BIS--AFPTC/ASD--AR

8/0120/63/000/003/0049/0054 55

AUTHOR: Mitrofanov, K. P.; Illarionova, N. V.; Shpinel', V. S. 54

TITLE: Counter with selective efficiency for registering recoilless Gamma radiation

SOURCE: Priory i tekhnika eksperimenta, no. 3, 1963, 49-54

TECH TAGS: Gamma radiation, Gamma radiation counter, resonant absorption, internal conversion electrons, Mossbauer effect

ABSTRACT: A radiation detector with selective response to recoilless Gamma radiation is described. Its operating principle is based on registering the internal conversion electrons which emerge as a result of Gamma radiation and which have a mean free path comparable to that of the latter. This is the case for compounds of tin such as SnO sub 2, for which the probability of resonant absorption of Gamma rays is high. A working model of such a "resonant" counter

Influence of gamma ...

S/056/62/043/006/018/067
B102/B104

interaction with the Sn^{119} nucleus is weaker than that of quadrupole interaction. It cannot be attributed to any certain chemical structure. There is 1 figure.

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Institute of Nuclear Physics of Moscow State University); Institut neftekhimicheskogo sinteza Akademii nauk SSSR (Institute of Petrochemical Synthesis of the Academy of Sciences USSR) ✓

SUBMITTED: July 20, 1962

Card 3/3

S/056/62/043/006/018/067
B102/B104

Influence of gamma ...

investigated. The spectrum of non-irradiated I shows a symmetric doublet, the peaks corresponding to the velocities -0.6 and +4.2 mm/sec. Irradiation with maximum dose led to a distinct change in the spectrum: two lines with an intensity ratio 1:3 arose, corresponding to the velocities -0.3 mm/sec and 4 mm/sec. indicating a disintegration of I into C_4H_9 and $SnSO_4$. In a few cases only one oxygen atom was split off from I. On irradiating I in the presence of oxygen only one line appeared, its peak corresponding to zero velocity. This spectrum is interpreted as due to the presence of SnO_2 or a similar oxide formed in oxidation by O_2 produced on irradiation. The spectrum of the polymer irradiated with a dose of 11.2 Mr shows two lines of almost equal width and intensity at -0.15 and 2.85 mm/sec. When the dose is increased to 160 Mr both lines broaden, the latter doing so more rapidly but reducing its height at the same time. When the dose has reached 250 Mr, the line at -0.15 mm/sec has remained almost unchanged (width 1.5 mm/sec) but the 2.85 mm/sec line shows a splitting into several flat poorly resolved components. This asymmetry can be explained by assuming an intramolecular magnetic field whose energy of

Card 2/3

S/056/62/043/006/018/067
B102/B104

AUTHORS: Aleksandrov, A. Yu., Delyagin, N. N., Mitrofanov, K. P.,
Polak, L. S., Shpinel', V. S.

TITLE: Influence of gamma irradiation on the shape of Mössbauer
resonance absorption spectra of organo-tin compounds

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
no. 6(12), 1962, 2074 - 2076

TEXT: The spectra of Mössbauer resonance absorption of 23.8-keV gamma
quanta by Sn^{119} in organo-tin compounds depends on the valency of the ab-
sorbing atom, on the molecular structure and on peculiarities of the bonds
of the tin atom (ZhETF, 43, 448, 1962; 43, 1242, 1962). This dependence
could be used to draw conclusions on irradiation-induced changes of a
material from changes in the Mössbauer resonance absorption characteristics.
In order to study these possibilities, the Mössbauer resonance absorption
spectra of $(\text{C}_4\text{H}_9)_2\text{SnSO}_4$ (I) and $[(\text{C}_4\text{H}_9)_2\text{Sn}(\text{OCOCCH}_2\text{CH}_2)_2]_n$, irradiated at
25-35°C by Co^{60} γ -rays with doses between $4 \cdot 10^{20}$ and $3 \cdot 10^{22}$ ev/cm^3 were
Card 1/3

Quadrupole interaction ...

2/056/62/043/004/018/061
B102/B180

selective sensitivity to 23.8-kev γ -quanta. 5 mg/cm² SnO₂ containing Sn^{119m} was used as a γ -quantum source. The organo-tin compounds investigated had no impurities which affected the shape of the spectrum. In all measurements the source was kept at room temperature and the absorber at liquid-nitrogen temperature. The values obtained for δ and for the quadrupole splitting constant Δ vary regularly for the compounds for which the electronegativity of the X atoms varies. Double bonds, and also atoms with high electronegativity not directly bonded with the tin atoms, were found to exert a strong effect on the electric field strength acting on the tin nucleus. This can be qualitatively explained by the molecular structure. There are 5 figures and 1 table. ✓

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Institute of Nuclear Physics of Moscow State University). Institut neftekhimicheskogo sinteza Akademii Nauk SSSR (Institute of Petrochemical Synthesis of the Academy of Sciences USSR)

SUBMITTED: May 18, 1962
Card 2/12